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(54) METHOD FOR DEPOSITING OXIDE AT ATOMIC LAYER LEVEL BY VAPOR GROWTH METHOD

(57)Abstract:
PURPOSE: To grow an oxide thin film while controlling this thin film at an atomic layer level by adsorbing an org. metal complex to the OH group generated on a substrate then removing only the ligands by a prescribed operation to form the metal which is the central atom of the complex in the form of bonding this metal to th O atom of the OH group.
CONSTITUTION: The org. matter of the oxide substrate consisting of SiO2, etc., is burned out by a method of exposing this substrate to an oxygen atmosphere generally kept at 460 to 500° C and thereafter, the substrate is exposed to pure steam to form the surface having the surface OH group. The vapor of the metal complex [for example, dibipyriyl metanate (DPM)] having the ligand which possesses the affinity to the above-mentioned OH group is introduced to cause chemical vapor deposition. The substrate adsorbed with the above- mentioned complex is then exposed to an atmosphere contg. H2O. As a result, the structure in which only the ligand of the metal complex is removed and the central atom of the complex, i.e., the metal is bond d to the 0, for example, Cu-O- structure is formed on the substrate.

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